New Law Significantly Affects Small Rural Water Systems

The Safe Drinking Water Act Amendments of 1996 provide funds to the States through the newly created Drinking Water State Revolving Fund and give States greater control and flexibility to allocate funds to bring water systems into compliance with the regulations. These changes could help many rural communities, especially water systems in small towns in highly rural areas, particularly those that States define as disadvantaged.

Many rural communities lack the information and expertise needed to identify and address their environmental problems. The per household or per capita cost of complying with environmental regulations can be extremely high in small rural communities, in some cases leading to poor compliance with environmental regulations and even endangering the health of residents. Drinking water regulations are particularly costly to water systems serving 3,300 or fewer residents, which are unable to take advantage of economies of scale in management, monitoring, and treatment. Compliance costs are also problematic for some larger rural communities with low incomes and tax bases and for places with particularly costly environmental conditions.

The 1996 amendments to the Safe Drinking Water Act (SDWA) in PL 104-182 provide new funding to improve the safety of drinking water, including a new State Revolving Fund (SRF) to finance drinking water system improvements, with special consideration for small and disadvantaged communities. This legislation also makes EPA's regulatory procedures more flexible so that resources can be used effectively to combat the most serious environmental problems facing each community. Special "small system" regulatory provisions could help many rural communities deal with the special problems they face because of high costs and low tax bases. However, it is up to the States to enable their communities to take advantage of most of these provisions.

Major Provisions Include Prevention Programs, Consumer Information, Regulatory Improvements, and New Federal Funds

New and Stronger Prevention Approaches. The source-water protection provisions require States to identify watershed boundaries of drinking water sources, such as rivers, lakes, reservoirs, and tributaries. States then must determine which regulated contaminants are present in the watershed. Community-based partnerships may now petition States for funding to protect water sources from contamination. Prevention programs are cost-effective means for avoiding expensive water treatment, and they can also prevent the cost of compliance with regulations from spiraling out of control.

The capacity development provisions help build the ability to manage, operate, and finance water systems. States may set aside funds in the new SRF to finance capacity development (including managerial, technical, and financial capacity) and implementation efforts. Particularly important is the provision for operator certification, which is a key to keeping costs down while increasing water safety. Because the cost of training operators can be a burden on small rural communities, water systems serving 3,300 or fewer people now may be reimbursed by EPA for operator training costs.

Better Consumer Information. Large water systems are required to provide annual reports directly to their customers on water contaminants and related health effects. State Governors have the discretion to wave this requirement and allow small systems to report indirectly through local papers or give public notice that reports are available to consumers upon request. EPA is required to consult closely with the community, risk communication experts, and environmental and public interest groups in developing any new regulations. These consultations should ensure that the reports inform the public, as well as encourage an informed public to work for securing safe drinking water.

Persons served by a public water system must be notified within 24 hours of any regulatory violations that could seriously harm human health as a result of short-term exposure. A State must send an annual report to the EPA Administrator on violations of national drinking water regulations by public water systems in the State and must make such report available to the public.

Regulatory Improvements. The requirement that EPA develop standards for 25 new contaminants every 3 years has been eliminated. EPA now has the flexibility to decide whether or not to regulate a new contaminant after completing a required review of at least five new contaminants every 5 years. EPA must meet three conditions before it regulates a new contaminant: (1) the contaminant harms human health, (2) it is known or highly likely to be present in public water systems at a high enough frequency and concentration to cause risk to public health, and (3) regulation can reasonably reduce risk to public health. In addition, EPA must publish a nonbinding analysis assessing both the costs and benefits of any proposed regulation.

The 1996 amendments cover several specific contaminants, including a program for testing tap water for estrogen-like substances or other chemicals that have potential hormonal effects. The law incorporates the provisions of the regulatory negotiation on disinfection byproducts like chlorine. And EPA must reserve $10 million annually for health studies that give priority to effects of the deadly micro-organism Cryptosporidium and possible cancer-causing byproducts of tap water disinfectants like chlorine.

Drinking Water State Revolving Fund. The new State-administered safe Drinking Water State Revolving Fund (DWSRF) was authorized through fiscal year 2003. For fiscal year 1997, Congress appropriated $1.275 billion for this program. Starting in FY 1998, the actual level of DWSRF funding allocated to individual States, above a minimum of 1 percent will be based on a needs survey completed and released by EPA in January 1997. One and one-half percent of the Federal funds appropriated for the DWSRF can be used for grants to Indian Tribes and Alaska Native villages to make drinking water infrastructure improvements. States must match Federal funds with their own funds to the amount of 20 percent of their Federal DWSRF capitalization grant.

States may use DWSRF funds to provide loans to public water systems to make improvements in the drinking water infrastructure. States must provide at least 15 percent of the loans from the DWSRF to small communities with fewer than 10,000 people. States may spend up to 30 percent of the loan funds to provide loan subsidies and loan forgiveness to disadvantaged communities, with States setting their own criteria for disadvantaged communities. DWSRF loan subsidies and forgiveness may be made available only to disadvantaged communities.

States also have the option of setting aside funds from the capitalization grants to provide assistance to State programs. States can set aside up to 10 percent of their DWSRF capitalization grant for programs protecting source water, capacity development, and operator certification. States can also use up to 15 percent (but no more than 10 percent for any single purpose) of their funds for water system pollution prevention projects, including source-water protection loans, technical and financial aid for source-water assessment, wellhead protection, and capacity development. In addition, State Governors may transfer up to one-third of DWSRF funding into the Clean Water SRF or an equivalent dollar amount from the Clean Water SRF to the DWSRF.

Rural Areas Expected To Benefit From Small-System Provisions

This act gives States the financial resources and wide flexibility to solve problems faced by small water systems. The major components of solution to these problems are capacity development, operator certification, source water protection, consumer awareness, SRF, and regulatory flexibility.

Small water systems (serving populations under 10,000) experience many problems associated with the lack of economies of scale. Many of the costs associated with these systems are “fixed costs” that are invariant with respect to size of population served. Consequently, small systems, particularly those serving less than 3,300 residents, can find it difficult, if not impossible, to pay for such things as full-time operators, operator training, and technologically intensive methods of monitoring and correcting for some contaminants. They also have difficulty in affording technology as traditionally described by EPA. Many small systems have historically underpriced their drinking water and underin-

vested in basic system maintenance, resulting in a large backlog of deferred maintenance.

The new small-system provisions of the Drinking Water legislation are meant to alleviate these problems (see box). They call for EPA to designate new affordable compliance technologies or variance technologies for small systems, make exceptions from monitoring for contaminants not likely to be present in the water supply, offer less costly ways of consumer reporting and disclosure, reimburse the expense of operator training, and reserve funding from the new DWSRF for planning and for building and improving their systems.

States have the option to set up a disadvantaged community program. The disadvantaged community program is important because it allows States to provide financial assistance in the form of loan subsidies and forgiveness, which can make the difference between affordable and nonaffordable systems for disadvantaged communities. This form of assistance is not generally available to all communities. The law defines "disadvantaged community" as the service area of a public water system that meets affordability criteria set by the State. States can spend up to 30 percent of their DWSRF on this disadvantaged community program.

It is up to the States to operate such a program and to identify which water systems and communities will benefit from small system provisions and from the disadvantaged com-

Special Provisions for Small Water Systems

Special Provisions	Serving population under 500	Serving population 500-3,300	Serving population 3,300-10,000
EPA must identify affordable treatment technologies	Eligible	Eligible	Eligible
Affordability-based variances in treatment techniques	Eligible	Eligible	Eligible, with EPA approval
Exemption from monitoring for contaminants unlikely to be present	May be eligible	May be eligible	May be eligible
Reimbursement of training costs for operator certification	Eligible	Eligible	Not eligible
Consumer Confidence Reports (CCR): Governors may excuse some communities from direct distribution of CCR to every consumer	Eligible	Eligible	Eligible
Financial Assistance: 15 percent of the State's DWSRF loan fund is set aside for small communities.	Eligible	Eligible	Eligible
Up to 30 percent of State's annual DWSRF available for loan subsidies, forgiveness of principal to disadvantaged communities	Eligible	Eligible	Eligible[1]

[1] States develop their own criteria for disadvantaged communities and may allow larger systems and communities to benefit from this form of assistance. However, small communities may benefit most due to their high costs and low tax bases.

munity program. When States operationalize these provisions, small towns (places with population less than 10,000) may especially benefit. About 17,000 of these small towns existed in 1990, containing about 11 percent of U.S. population. Although most of the residents of these towns live in metropolitan counties (table 1), the very small towns (less than 2,500 population) that characterize many rural areas could benefit significantly because the new legislation puts special emphasis on very small systems. Nonmetro counties contain about three times as many of these towns as metropolitan counties. An additional 66 million people (27 percent of U.S. population) live in unincorporated areas. Unincorporated areas often rely on private wells and septic tanks and are not served by any public water system, hence they are less likely to benefit from these provisions than small towns. Most of the residents (58 percent) of unincorporated areas are in metro areas, but a substantial share (42 percent) of them live in nonmetro areas.

Because very small towns and unincorporated areas are defined as rural according to Census, the most rural of nonmetropolitan counties may particularly benefit from the small-system provisions of this legislation. Highly rural counties are particularly common in the Great Plains, the South, and Appalachia (fig. 1). *[Faqir Singh Bagi, 202-219-0546, fsbagi@econ.ag.gov]*

Table 1

U.S. metropolitan and nonmetropolitan population, by size of place, 1990

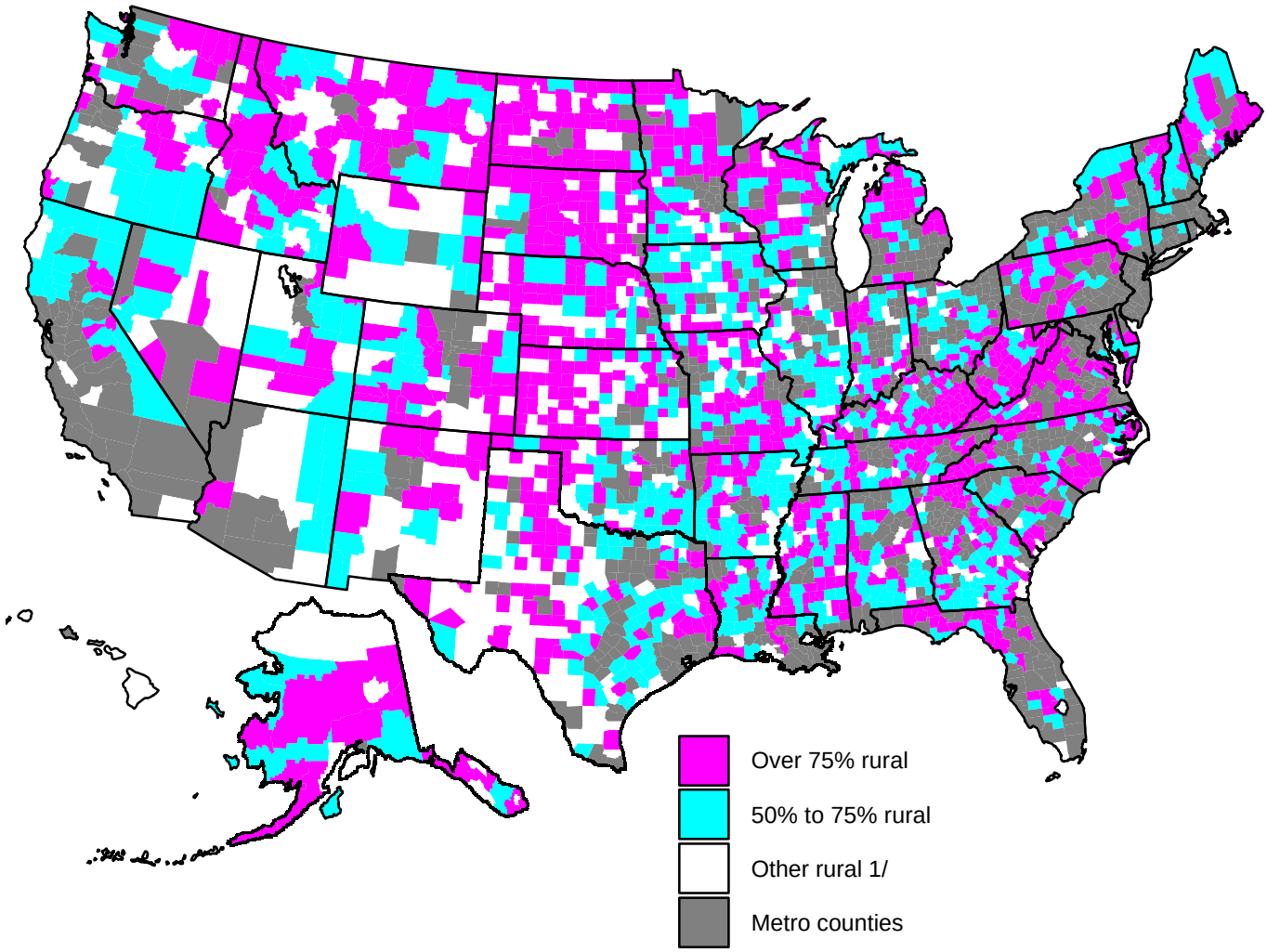
Size of place[1]	Metropolitan		Nonmetropolitan		Nonmetro share	
	Places	Population	Places	Population	Places	Population
	----------Number----------				---------Percent---------	
U.S. total	—	192,725,741	—	55,984,132	—	22.5
All places	10,020	154,231,159	13,415	28,306,844	57.2	15.5
Under 10,000 residents	5,717	15,651,891	11,543	12,868,361	66.9	45.1
Under 2,500 residents	4,130	4,283,840	10,795	7,646,972	72.3	64.1
Under 1,000 residents	2,130	1,009,429	7,858	2,990,999	78.6	74.7
Unincorporated (not in place)	—	38,494,582	—	27,677,288	—	41.8

[1]A place is a community defined by the Census.
Source: Calculated by ERS using Population and Housing data from Bureau of the Census, 1990.

Figure 1

Distribution of rural counties, 1990

Highly rural counties are concentrated in the Great Plains, Northwest, Great Lake States, Appalachia, and the South



1/ Uses Census definition of rural, includes towns under 2,500 population, plus unincorporated areas outside metropoliton urbanized areas.
Source: Calculated by ERS using decennial census of population data from the Bureau of the Census.